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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/814,151

04/01/2004

Insoo Kim

TK-0001

7359

34610

7590

12/11/2006

FLESHNER & KIM, LLP  
P.O. BOX 221200  
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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/814,151	KIM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George P. Wyszomierski	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-12, 14, 17-20 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 7-9, 13, 15, 16 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-5, 10-12, 14, 20 and 23 are rejected under 35 U.S.C. 102(a) as being anticipated by Chinese Patent 1480584 A, for reasons of record.

The English translation of CN '584 discloses mixing various bases including sodium hydroxide in a silver nitrate solution, mixing a second solution containing ethanol as a solvent, and combining the two solutions, followed by an oxidizing step using hydrogen peroxide, to prepare a material containing silver nanoparticles. The CN '584 method includes a step of adding hydrogen peroxide to a solvent and forming a plurality of nanosize metal particles. With respect to claim 14, it is considered inherent that the solvent contains either no surfactant or at least one surfactant. Thus, all aspects of the claimed invention is held to be fully met by the disclosure of Chinese 1480584 A.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 6, 17-19, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chinese Patent 1480584 A.

As stated in the previous Office Action, the '584 translation does not specify the ratio of

silver nitrate to solvent as set forth in claim 2, the specific solvents of claim 6, the temperature of claims 17 and 18, the separation step of claim 19, the two-step procedure of adding peroxide as set forth in claim 22, or the particle diameters of claims 24 and 25. However,

a) The ratio defined in claim 2 is a very broad range with the high end being greater than the low end by greater than a factor of 100; it is thus highly likely that any practical application of the '584 process would employ a ratio within the presently claimed limits.

b) China '584 employs alcohol generically as a solvent. It is axiomatic that one of skill in the art would choose to use one of the most readily available alcohols, such as methanol or ethanol, for this purpose in the '584 process.

c) With regard to temperature, it is a basic chemical principle that chemical reactions proceed at a faster rate at higher temperatures.

d) The '584 process is directed to obtaining nano-sized materials, and one skilled in the art would have employed a means such as filtration to separate the desired products from spent solvent and other undesired materials.

e) With regard to adding peroxide, such a step would not be instantaneous, but rather would involve adding peroxide over at least a brief period of time. This period of time can be broken down into two or more smaller time periods, during each of which some peroxide is added.

f) With regard to particle diameter, both the prior art and the claimed invention preferably produce silver particles by similar processes. It is thus a reasonable assumption that the diameters of the particles formed in the respective processes would be the same in either instance.

Thus, the Chinese '584 disclosure is held to create a prima facie case of obviousness of the presently claimed invention.

5. In a response filed October 10, 2006, Applicant alleges that the claimed invention can be distinguished from the prior art by pointing to some differences between embodiments disclosed in the specification and the disclosure of the prior art, particularly with respect to the adding of peroxide and forming of nanosized particles. In response, the examiner's position is that the CN '584 document includes disclosure of a step that involves adding a peroxide to a solvent and forming a plurality of nanosized metal particles, i.e. meets the literal limitations of the instant claims. With regard to any particular differences between the prior art and some disclosure in the specification, it is well-settled that limitations present in the specification but not recited in the claims are not read into the claims, but rather that claims are given their broadest reasonable interpretation during examination.

6. Claims 7-9, 13, 15, 16 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the central facsimile number, (571)-273-8300. This Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP F700

GPW

December 8, 2006